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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/642,287

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Yuan-Chang Lai

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EXAMINER

MCDONALD, RODNEY GLENN

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/642,287

Applicant(s)

LAI, YUAN-CHANG

Examiner

Rodney G. McDonald

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 6, "the intensity" lacks antecedent basis.

Claim 2, lines 2-3, is indefinite because the phrase "the semi-blocked layer is formed on the readable embossed area and is not formed on the readable embossed area" is unclear.

Claim 6, line 1, is indefinite because "semi-blocked" should be "semi-blocked layer".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Junji et al. (U.S. Pat. 5,246,531) in view of Koop et al. (U.S. Pat. 5,667,658).

Regarding claim 1, Junji et al. teach a substrate for a master plate for preparing a stamper. (Column 3 lines 42-43) Junji et al. teach in Fig. 1 providing a positive type photoresist film 2 on a glass substrate for a disk. (Column 5 lines 4-5) A photomask 3 is caused to contact the photoresist film 2 through a thin film 4 for a mask. Ultraviolet

rays 5 are radiated onto the photomask 3 so as to expose the photoresist film 2. In this case, the thin film 4 is not provided in a formation area A1 of a sector (or track) address portion 1a. Consequently, a quantity of light transmitted to the photoresist film 2 is not reduced. The thin film 4 remains at a thickness of about 10 to 200 Angstroms in a formation area B1 of a guide track portion 1b. Consequently, the quantity of light transmitted to the photoresist film 2 is reduced. (Column 5 lines 6-16; Here the Examiner interprets the patterned semi-block layer to be the patterned thin film mask 4 on the photoresist 2. The Examiner interprets the UV light to be the beam of light. The light beam is "partially blocked" by the 10 to 200 Angstroms of thin film since Junji et al. suggest that the quantity of light transmitted is reduced. The effect of this is reduction in intensity of the light.) After the photomasks 3 and 4 are removed, the exposed photoresist film 2 is developed as shown in Fig. 3. (Column 5 lines 17-19)

Regarding claim 4, Junji et al. teach the stripping of the semi-blocked layer occurs when the photomasks 3 and 4 are removed. (Column 5 line 17)

Regarding claim 5, Junji et al. teach the semi-blocked layer as the film 4 as discussed above. The film 4 can be made of a metallic pattern. (Here the examiner interprets the metallic pattern to be semi-reflecting since Junji et al. suggest transmitted light reduction through film 4.) (Column 3 lines 59-62; See Junji et al. discussed above)

Regarding claim 6, the semi-blocked layer consisting of silver is believed to be covered by Junji et al.'s disclosure of "metallic pattern 4" since silver is a metal material. (Column 3 lines 59-61)

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Regarding claim 7, Junji et al. teach that the substrate can be glass. (Column 5 lines 3-5)

Regarding claim 8, Junji et al. teaches that the light beam directly expose a part of the photoresist layer because the metallic pattern 4 does not block area A1 of the substrate. (Column 5 lines 8-13)

Regarding claim 9, Junji et al. teach that the light beam partially passes through the semi-block layer because the thin film 4 remains on portions of the photoresist where the quantity of light transmitted to the photoresist film is reduced. (Column 5 lines 8-16)

Regarding claim 10, Junji et al. recognize that the disk can be used for optical memory elements. (Column 3 lines 40-43)

The differences between Junji et al. and the present claims are that sputter on the photoresist layer after developing is not discussed (Claim 1) and forming the sputtered metal layer of NiV alloy is not discussed (Claim 10).

Regarding the sputtering of a metal layer on the photoresist after developing, Koop et al. teach production of a master (stamper) where a photoresist layer 5 is deposited on a glass plate 3. A laser beam develops the photoresist. A thin layer of NiV is then sputtering onto the photoresist. (Column 1 lines 55-59; Column 2 lines 1-5)

Regarding the sputtered metal layer of NiV, Koop et al. teach utilizing a sputtered layer of NiV on the photoresist. (Column 2 line 4)

The motivation for sputtering a NiV layer on a photoresist of a stamper is that it allows for separating a master easily from the layer of photoresist. (Column 1 lines 33-37)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Junji et al. by sputtering a photoresist layer after developing and forming the sputtered metal layer of NiV alloy on the photoresist as taught by Koop et al. because it allows for separating a master easily from the layer of photoresist.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Junji et al. in view of Koop et al. as applied to claims 1, 4-11 above, and further in view of Cheng et al. (U.S. Pat. 5,432,047).

The differences not yet discussed are the readable and unreadable embossed area.

Junji et al. discussed above establishes utilizing a semi-block patterned layer to form grooves of different heights on a substrate through a photoresist. The places where the semi-block layer is present produce smaller grooves in the process steps and the places where the semi-block layer is not present produce larger grooves in the process steps. (See Junji et al. discussed above) Cheng et al. teach that grooves of larger depths can be formed in a data track portion where information can be read or recorded. Cheng et al. establish that between the tracks grooves of lesser depth can be formed to differentiate between the tracks. These grooves of lesser depths are

unreadable grooves meant for separating the tracks. (See Cheng et al. Column 5 lines 19-44; Column 5 lines 50-67)

The motivation for placing a semi-block layer over an unreadable area is that it allows production of grooves of less depth, which allows for establishing differentiation between the tracks. (See Cheng et al. Column 5 lines 19-44; Column 5 lines 50-67)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have placed a semi-block layer over an unreadable area as taught by Junji et al. and Cheng et al. because it allows for production of grooves of less depths which allows for establishing differentiation between the tracks.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Junji et al. in view of Koop et al. as applied to claims 1, 4-11 above, and further in view of Kondo et al. (U.S. Pat. 6,580,678).

The difference not yet discussed is forming the semi-block layer over the data area.

Junji et al. discussed above establishes utilizing a semi-block patterned layer to form grooves of different heights on a substrate through a photoresist. The places where the semi-block layer is present produce smaller grooves in the process steps and the places where the semi-block layer is not present produce larger grooves in the process steps. (See Junji et al. discussed above) Kondo et al. recognize in Fig. 2 that in the RAM area grooves should be formed of smaller heights than in the ROM area. (Fig. 2) The RAM is a data area. (Column 6 lines 37-39)


The motivation for placing a semi-block layer over a data area is that it allows production of grooves of less depth for data. (Kondo et al. Column 6 lines 37-39)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have placed a semi-bloc layer over a data area as taught by Kondo et al. because it allows for producing grooves of less depth for data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Rodney G. McDonald
Primary Examiner
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